AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claims 1-20 (cancelled).

21. (New) A device for measuring pressure in a gas mixture, comprising:

an amperometric sensor that operates according to a limiting current principle, the sensor including two first electrodes mounted on a solid electrolyte, a direct voltage being applied to the first electrodes, wherein one of the first electrodes is shielded by a diffusion barrier;

a measuring element configured to measure the limiting current flowing via the first electrodes as a measure of the gas pressure; and

an arrangement configured to fix, at least during a pressure measuring phase, a mole fraction of a gas component drawn upon for the pressure measurement upstream of the diffusion barrier to a constant 100%.

22. (New) The device as recited in claim 21, wherein the arrangement includes a storage volume for the gas component, the storage volume be arranged in front of the diffusion barrier in the solid electrolyte, a diffusion path closing off the storage volume in a direction of the gas mixture, the arrangement further including two second electrodes situated at the solid electrolyte to pump the gas component all the way through the solid electrolyte into the storage volume.

23. (New) The device as recited in claim 22, wherein the diffusion path has a small pressure gradient.

24. (New) The device as recited in claim 22, wherein the storage volume is formed by a chamber adjacent to the diffusion barrier, and the diffusion path is formed by a second diffusion barrier made of a ceramic material that closes off the chamber.

25. (New) The device as recited in claim 24, wherein the ceramic material is aluminum oxide (Al_2O_3).

26. (New) The device as recited in claim 22, wherein the storage volume is formed by a chamber that is adjacent to the diffusion barrier, and the diffusion path is formed by at least one extended channel.

27. (New) The device as recited in claim 22, wherein the storage volume and the diffusion path are formed by a porous filler piece made of a ceramic material which borders on the diffusion barrier.

28. (New) The device as recited in claim 27, wherein the ceramic material is aluminum oxide (Al_2O_3).

29. (New) The device as recited in claim 21, wherein the diffusion barrier has a porosity that is required for Knudsen diffusion.

30. (New) The device as recited in claim 22, wherein the second electrodes for pumping the gas component are additional electrodes, one of the additional electrodes, operated as an anode, being situated within the storage volume and one of the additional electrodes, operated as a cathode, being exposed to the gas mixture, wherein a direct voltage is applied to the additional electrodes .

31. (New) The device as recited in claim 22, wherein the second electrodes for pumping the gas component are formed by the first electrodes of the amperometric sensor, whose electrode voltage is able to have its polarity reversed for a time interval, before the pressure measuring phase, in such a way that the one of the first electrodes that is shielded by the diffusion barrier is operated as an anode.

32. (New) The device as recited in claim 22, wherein the gas mixture is the exhaust gas of an internal combustion engine and the gas component is oxygen.

33. (New) The device as recited in claim 32, wherein the device is configured as a sensing element to determine oxygen concentration in exhaust gas of an internal combustion engine,

electrodes of the sensing element are used as the first electrodes of the amperometric sensor and to pump the gas component.

34. (New) The device as recited in claim 22, further comprising:

a Nernst cell made up of a solid electrolyte and two second electrodes situated thereon, a first one of the second electrodes being situated in a measuring chamber in the solid electrolyte, and a second one of the second electrodes being exposed to a pumped oxygen reference in a reference gas channel developed in the solid electrolyte; and

a pump cell made up of a solid electrolyte and two pump electrodes situated thereon, an outer one of the pump electrodes being exposed to the exhaust gas and an inner one of the pump electrodes being situated in the measuring chamber;

wherein, in a connecting channel to the exhaust gas which opens out into the measuring chamber, the diffusion path is developed together with the storage volume, the diffusion barrier is situated between the measuring chamber and the storage volume, and the pump electrodes are used intermittently for pumping oxygen and for measuring the gas pressure.

35. (New) The device as recited in claim 22, wherein the sensor includes a Nernst cell made up of a solid electrolyte and two second electrodes situated thereon, a first one of the second electrodes being a measuring electrode and being situated in a measuring chamber developed in the solid electrolyte, and a second one of the second electrodes being a reference electrode and being exposed to a pumped oxygen reference in a reference gas channel developed in the solid electrolyte; and

a pump cell made up of a solid electrolyte and two pump electrodes situated thereon, an outer one of the pump electrodes being exposed to the exhaust gas and an inner one of the pump electrodes being situated in the measuring chamber;

wherein the reference gas channel is provided with an opening that is exposed to the exhaust gas, and wherein in the reference gas channel between the reference electrode and the opening, the diffusion path and the storage volume are developed, and wherein the diffusion barrier is situated between the storage volume and the reference electrode, and an outer one of the pump electrodes and the reference electrode being used at intervals for pumping oxygen and for measuring gas pressure by switching over their voltage potentials.

36. (New) The device as recited in claim 30, wherein the sensor has a Nernst cell made up of a solid electrolyte and two second electrodes situated thereon, a first one of the second electrodes being a measuring electrode and being situated in a measuring chamber developed in the solid electrolyte and a second one of the second electrodes being a reference electrode and being exposed to a pumped oxygen reference in a reference gas channel developed in the solid electrolyte, and a pump cell made up of a solid electrolyte and two pump electrodes situated thereon, and outer one of the pump electrodes being exposed to the exhaust gas and an inner one of the pump electrodes being situated in the measuring chamber;

wherein the reference gas channel is provided with an opening that is exposed to the exhaust gas, and wherein, in the reference gas channel between the reference electrode and the opening, the diffusion path and the storage volume, arranged upstream thereof, are developed, and wherein the diffusion barrier is situated in the reference gas channel on a side of the reference electrode facing away from the diffusion path, and on the side of the diffusion barrier facing away from the reference electrode the second one of the first electrodes, operated as an anode, is situated, and for pumping oxygen, the outer one of the pump electrodes and the reference electrode are drawn upon, and for measuring the gas pressure the outer pump one of the electrodes and the second electrode of the amperometric sensor are drawn upon.

37. (New) A sensing element for determining oxygen concentration in exhaust gas of an internal combustion engine, comprising:

a Nernst cell made up of a solid electrolyte and two electrodes situated thereon, a first one of the electrodes being a measuring electrode and being situated in a measuring chamber developed in the solid electrolyte, and a second one of the electrodes being a reference electrode and being exposed to a pumped oxygen reference in a reference gas channel developed in the solid electrolyte;

a pump cell made up of the solid electrolyte and two pump electrodes situated thereon, an outer one of the two pump electrodes being exposed to the exhaust gas and an inner one of the pump electrodes being situated in the measuring chamber; and

an integrated device for measuring pressure in the exhaust gas, the device including:

an amperometric sensor that operates according to a limiting current principle, the sensor including two first electrodes mounted on a solid electrolyte, a direct voltage being applied to the electrodes, wherein one of the first electrodes is shielded by a diffusion barrier;

a measuring element configures to measure the limiting current flowing via the first electrodes as a measure of the gas pressure; and

an arrangement configured to fix, at least during a pressure measuring phase, a mole fraction of a gas component drawn upon for the pressure measurement upstream of the diffusion barrier to a constant 100%.

38. (New) The sensing element as recited in claim 37, wherein:

the reference gas channel has an opening that has exhaust gas applied thereto;

between the reference electrode and the opening, a diffusion path and an oxygen storage volume being arranged in front of the diffusion path in the direction towards the reference electrode;

on a side of the reference electrode facing away from the diffusion path, an additional electrode, separated by a diffusion barrier, is situated; and

for measuring the gas pressure, the reference electrode is operated in such a way that a constant mole fraction of the oxygen of 100% is present in the chamber, and the limiting current flowing via the outer pump electrode and the additional electrode is recorded as a measure for the exhaust gas pressure.

39. (New) The sensing element as recited in claim 37, wherein:

the reference gas channel has an opening that has exhaust gas applied thereto;

between the reference electrode and the opening a diffusion path and an oxygen storage volume, being arranged in front of it in a direction towards the reference electrode, and being separated from the reference electrode by a diffusion barrier; and

at intervals, such a voltage is applied to the outer pump electrode and the reference electrode that a constant mole fraction of the oxygen of 100% is present in the oxygen storage volume, and after switching over the voltage, the limiting current flowing via the outer pump electrode and the reference electrode is recorded as a measure for the pressure of the exhaust gas.

40. (New) The sensing element as recited in claim 31, wherein:

a diffusion path and an oxygen storage volume are arranged in front of the diffusion path in the direction towards the measuring chamber, and are developed in a connecting channel to the exhaust gas, that opens out into the measuring chamber;

the oxygen storage volume being separated from the measuring chamber by the diffusion barrier; and

the pump cell is operated at intervals in such a way that a constant mole fraction of oxygen of 100% is present in the oxygen storage volume, and after switching over a direction of the current in the pump cell, the limiting current flowing via the pump electrodes is recorded as a measure for the pressure of the exhaust gas.

41. (New) The sensing element as recited in claim 38, wherein the diffusion barrier has a porosity required for Knudsen diffusion and the diffusion path has a pressure gradient that is as small as possible.

42. (New) The sensing element as recited in claim 32, wherein the oxygen storage volume is formed by a chamber and the diffusion path is formed by at least one additional diffusion barrier made of ceramic material.